SMALL DREDGER PROGRAMMATIC ALTERNATIVES ANALYSIS (SDPAA) FOR DISPOSAL OF MAINTENANCE DREDGED MATERIAL IN THE SAN FRANCISCO BAY REGION

OCTOBER 28, 2004

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SMALL DREDGER PROGRAMMATIC ALTERNATIVES ANALYSIS (SPDAA) FOR DISPOSAL OF MAINTENANCE DREDGED MATERIAL IN THE SAN FRANCISCO BAY REGION

1.0 INTRODUCTION

The management of dredging and dredged material disposal in the San Francisco Bay Region is coordinated through the agencies of the Long Term Management Strategy (LTMS). These agencies are, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the San Francisco Bay Regional Water Quality Control Board, the San Francisco Bay Conservation and Development Commission and the California State Lands Commission. An important element of the dredging community are small maintenance dredging projects represented principally by small craft marinas and waterfront homeowners. Federal and state regulations require an analysis of alternatives with respect to the disposal of dredged material prior to the authorization of a dredging and disposal project. Due to the common nature of most small dredger projects the agencies which created Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Area (LTMS agencies) have undertaken the development of this programmatic alternatives analysis. The purpose of the document is to provide those members of the small dredger class with the necessary analysis to obtain authorization for disposal or reuse of dredged material.

1.1 Proposed Federal and State Actions

The proposed State and Federal actions for which this analysis is being prepared are the issuance of Clean Water Act Section 404 permits by the U.S. Army Corps of Engineers (Corps), Clean Water Act Section 401 water quality certifications and Porter-Cologne Act reviews by the San Francisco Bay Regional Water Quality Control Board (RWQCB), and McAteer-Petris Act permits by the San Francisco Bay Conservation and Development Commission (BCDC) for the placement of dredged material from maintenance of "small dredger" projects in the San Francisco Bay Region. In support of these permits, and the small dredger community, the LTMS agencies have prepared this Programmatic Alternatives Analysis for the disposal of maintenance dredging material. However, note that by itself this alternatives analysis does not authorize anyone to discharge dredged or fill material, nor is there any guarantee that the individual projects discussed herein will necessarily receive a dredging or disposal permit.

1.2 Relationship to the LTMS EIS/EIR and Management Plan

In 1999, the final LTMS Policy Environmental Impact Statement and Programmatic Environmental Impact Report (EIS/EIR) was approved under both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Based on the final LTMS EIS/EIR's impact evaluations, the "environmentally preferred alternative" (with its associated Transition strategy and related policy-level mitigation measures) was adopted as the overall approach for implementation of the LTMS.

The adopted plan is a comprehensive regional dredged material management program that calls first for beneficial re-use to the extent practicable, ocean disposal for other projects where practicable, and a continuation of unconfined in-Bay disposal at reduced levels for the remaining subset of projects. More specifically, the goals considered practicable for the region to achieve on average in the long term are 40 percent beneficial re-use, 40 percent ocean disposal, and 20 percent unconfined in-Bay disposal: the "40-40-20 plan." However, the EIS/EIR and Management Plan specifically recognized that this long-term goal could not be met immediately. The LTMS agencies therefore established a 12-year transition period to allow time for new beneficial re-use alternatives to become available, and to allow dredgers time to prepare to switch over to the alternatives. Regular decreases in the annual, overall in-Bay disposal volume limit were built into the Transition Period, with the additional requirement that if these limits were not met through "voluntary" measures on the part of the dredgers, rigid project-specific disposal allocations would automatically be triggered.

The LTMS Management Plan was approved in 2001 to implement and achieve the adopted goals of the LTMS program. The general impacts of dredging projects were evaluated in the final EIS/EIR, and the Small Dredger class was identified and discussed as part of that evaluation. The Small Dredger class was

also defined in the Management Plan. This SDPAA is an element of the overall LTMS program and is specifically tiered under the evaluations and findings of the LTMS Final EIS/EIR and Management Plan.

"Environmental Work Windows" are an important aspect of the LTMS program. They were established via Endangered Species Act (ESA) consultations on the EIS/EIR and are implemented via the Management Plan. This SDPAA presumes that small dredger projects are operating in compliance with all applicable Environmental Work Windows. If a small dredger project cannot comply with Environmental Work Windows, it must go through a project specific ESA consultation with the appropriate resource agency. To the extent such consultation allows in-Bay disposal the LTMS agencies still consider the SDPAA applicable to that project.

1.3 Relationship to the Clean Water Act

The Corps, EPA and RWQCB regulate disposal of dredged material in San Francisco Bay pursuant to the Clean Water Act (CWA). Section 404(b)(1) of the CWA establishes procedures for the evaluation of permits for the discharge of dredged or fill material into waters of the United States. The 1980 EPA Guidelines (40 CFR Part 230) were promulgated specifically pursuant to Section 404(b)(1) of the Act. These 404(b)(1) Guidelines govern, in part, the issuance of permits by the Corps. The Corps 1986 Regulations state, at 33 CFR 320.4(a)(1), "For activities involving 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) Guidelines". The Regional Water Quality Control Board, under the authority of the Porter-Cologne Water Quality Control Act may issue discharge requirements for the disposal of dredged materials.

Subpart B of the 404(b)(1) Guidelines (40 CFR 230.10), Compliance with the Guidelines, establishes the alternatives analysis requirements which must be met. In particular, 40 CFR 230.10(a) states in relevant part that:

> "(N)o discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.
>
> (1) For the purposes of this requirement, practicable alternatives include, but are not limited to:
>
> (i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;
>
> (ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters.
>
> (2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes…"

In addition, section 40 CFR 230.10(a)(5) of the Guidelines specifically provides for incorporating relevant planning-based evaluations to help streamline alternatives analyses for covered activities:

> "To the extent that practicable alternatives have been identified and evaluated under a Coastal Zone Management program, a section 208 program, or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines. Where such evaluation is less complete than that contemplated under this subsection, it must be supplemented accordingly."

This programmatic alternatives analysis for small dredger projects in the San Francisco Bay region was prepared in accordance with these 404(b)(1) Guidelines provisions, as follows.

a. **Basic Project Purpose:** The basic purpose of the "small dredger" projects considered under this programmatic analysis is "**Disposal of dredged material".**

b. **Overall Project Purpose:** The overall purpose of the projects considered is the "**Disposal of dredged material from small dredger maintenance projects in the San Francisco Bay region consistent with the adopted LTMS EIS/EIR and Management Plan".**

c. **Section 404 Jurisdiction:** San Francisco Bay, its tributary rivers and streams and adjacent wetlands, and the ocean out to the three mile limit are "waters of the United States" within Section 404 jurisdiction. Designated multi-user disposal sites in the region are not located in "special aquatic sites", but some alternatives (including some beneficial re-use sites) are. [1]

d. **Plan-Based Evaluation:** The LTMS EIS/EIR and Management Plan, discussed further below, constitute a regional "plan" under NEPA, CEQA, and the CWA, consistent with the Guidelines at section 40 CFR 230.10(a)(5).
Application of the 404(b)(1)Guidelines by EPA and the Corps allows for consideration of the reasonableness of the cost of an alternative, relative to the nature of the project, the type of project proponent, and the "market" within which the project exists. The market for different kinds of projects, and therefore the range of alternatives and reasonable costs of doing business within that market, varies widely. For small dredger maintenance dredging in the San Francisco Bay region, the "market area" is decidedly local. Therefore the range of disposal options is limited to those that are relatively nearby to the small dredger projects, technically feasible and cost effective for small operations.

1.4 Relationship to the San Francisco Bay Plan

The San Francisco Bay Conservation and Development Commission regulates dredging and dredged material disposal in the San Francisco Bay. BCDC, under authority of the state McAteer-Petris Act of 1965, prepared the San Francisco Bay Plan and in 1968 adopted regulations and policies regarding dredging and disposal in the bay. The San Francisco Bay Plan dredging policies were amended to adopt the LTMS program findings including the 40-40-20 plan and the transition period and allocation strategy to implement that plan. Small dredgers as a class are specifically exempt from the project-specific in-Bay dredged material disposal allocations~~;~~ however, they must still fully comply with all other McAteer-Petris and San Francisco Bay Plan policies regarding dredging and the disposal of dredged material including the consideration of alternatives to in-Bay disposal. BCDC also is the state coastal management agency pursuant to the federal Coastal Zone Management Act for the San Francisco Bay segment of the California coastal zone and the Commission's law and policies are the basis for its federally-approved state coastal management program for the Bay.

a. **Applicable Policies**

While dredging and disposal projects must be consistent with all Bay Plan policies, those policies that are the basis for analysis of alternatives are cited below:

"1. Dredging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time to achieve the LTMS goal of limiting in-Bay disposal volumes to a maximum of one million cubic yards per year…"

" 3. Dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay and certain waterways unless disposal outside these areas is infeasible and the Commission finds: (a) the volume to be disposed is consistent with applicable dredger disposal allocations and disposal site limits adopted by the Commission by regulation; (b) disposal would be at a site designated by the Commission;

[1] The Guidelines at 40 CFR 230.10(a)(3) establish a presumption that alternatives exist which are both practicable and less damaging, if a discharge whose basic purpose is not "water dependent" is proposed for a "special aquatic site". Dredged material disposal is not a "water dependent activity; however the multi-user unconfined aquatic disposal sites in the San Francisco Bay region are not located in "special aquatic sites". Therefore the built-in presumption of a less damaging practicable alternative does not apply to typical in-Bay disposal options.

(c) the quality of the material disposed of is consistent with the advice of the San Francisco Bay Regional Water Quality Control Board and the inter-agency Dredged Material Management Office (DMMO); and (d) the period of disposal is consistent with the advice of the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service."

" 5. To ensure adequate capacity for necessary Bay dredging projects and to protect Bay natural resources, acceptable non-tidal disposal sites should be secured and the Deep Ocean Disposal Site should be maintained. Further, dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources, such as creating, enhancing, or restoring tidal and managed wetlands, creating and maintaining levees and dikes, providing cover and sealing material for sanitary landfills, and filling at approved construction sites."

1.5 Relationship with the San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay region's *Water Quality Control Plan* (Basin Plan) adopted in 1995 is the primary document used by the Water Board for the regulation of dredging in the Bay. The Basin Plan identifies the LTMS strategy as the key process for addressing dredging operations in the Bay and for achieving the goals of the LTMS.

As part of the Section 404 permitting process, the dredging permit applicant must seek water quality certification from the State of California, in accordance with Section 401 of the CWA. The Regional Board reviews the proposed project, then may grant or deny certification. Additionally, the Regional Board may choose to act under the authority of the state's Porter Cologne Water Quality Control Act, by issuing waste discharge requirements (WDR) for the project in conjunction with the water quality certification. Water quality certifications and waste discharge requirements contain conditions to protect water resources that the permit must meet during the term of the permit. Small dredgers must comply with the Basin Plan, the Board's 401 Certification, and waste discharge requirements issued under the State's Porter Cologne Water Quality Control Act.

1.6 Purpose of the SDPAA

The purpose of this alternative analysis is to provide the LTMS agencies with the information necessary to evaluate on a programmatic basis:

a. Whether there are practicable disposal alternatives for "small dredger" projects that do not involve a discharge into waters of the United States;

b. Whether there are practicable alternatives for "small dredger" projects that will have less adverse impact on the aquatic ecosystem than the projects as proposed; and

c. Whether any practicable alternatives identified for "small dredger" projects would have other significant adverse environmental consequences.

1.7 Level of Analysis

The 404 Guidelines do not contemplate that the same intensity of analysis will be required for all types of projects, but instead envision a correlation between the scope of the evaluation and the potential extent of adverse impacts on the aquatic environment. Similar guidance with respect to the appropriate level of analysis is also provided in the Corps' Regulatory Guidance Letter No. 93-2, dated 23 August 1993. The Guidelines and Regulatory Guidance Letter 93-2 afford flexibility to adjust the stringency of the alternative review for projects or classes of projects that would have only minor impacts. Minor impacts are associated with activities that generally would have little potential to degrade the aquatic environment and include one, and frequently more, of the following characteristics: they are located in aquatic resources of limited natural function; they are small in size and cause little direct impact; they have little potential for secondary or cumulative impacts; and/or they cause only temporary impacts.

Most if not all of these characteristics apply to "small dredger" maintenance dredging projects in the San Francisco Bay region as defined below. The extent of impacts is considered to be minimal for the Small Dredger class as a whole. Therefore a programmatic level of analysis is appropriate for this SDPAA.

The SDPAA will serve as the small dredger 404(b)(1) alternative analysis for the federal agencies and the presentation in this analysis is based on the CWA provisions. In addition, the state agencies find that the analysis in the SDPAA is suitable for interpretation of the Bay and Basin plan policies applicable to small dredgers. The state agencies will consider small dredgers using this analysis as guidance.

2.0 SMALL DREDGER PROGRAM DESCRIPTION

2.1 Small Dredger Class Defined

The Small Dredger class is defined in the LTMS Management Plan as "project sponsors of dredging projects with a depth no deeper than -12 feet Mean Lower Low Water (not including over-depth dredging) and generating an average yearly volume as defined in Section 10723 (of the Management Plan) of less than 50,000 cubic yards of material."

2.2 Small Dredger Class Projects Initially Identified

A listing of initially identified small dredger projects within the San Francisco Bay Region is provided as Table B to this analysis. The attached listing is not final or binding. Projects on the current list may be removed if there are substantial changes in their circumstances. The sponsor of any project not listed who believes that their project complies with the small dredger definition may request that the LTMS Dredged Material Management Office (DMMO) include them within the class. The request must be in writing and include documentation of project depth and average annual dredging and disposal volume. The volume calculation shall be based on in situ volumes dredged from all historical episodes for which data exists.

3.0 AVAILABLE DREDGED MATERIAL PLACEMENT SITES

3.1 Multi-User In-Bay Disposal Sites (Unconfined Aquatic Disposal)

a. **SF-11 Alcatraz:** Circular disposal area of 1,000 foot radius located 0.3 miles south of Alcatraz Island. Disposal is highly regulated and limited to 400,000 cubic yards (cy) per month from October to April and 300,000 cy per month from May to September. Only 150,000 cy per month can be clamshell material the remainder must be hydraulically dredged material. (These monthly volume limits are further restricted by the overall annual in-Bay disposal volume limits of the Transition Period established under the Management Plan: currently ~2.5 million cy, cumulatively, for SF-9, SF-10, and SF-11.) There are no tipping fees and/or unloading costs associated with the site.

b. **SF-10 San Pablo:** The site is a 1,500 foot by 3,000 foot rectangle located 3.0 miles northeast of Point San Pedro in southern San Pablo Bay in Marin County. Disposal is highly regulated and limited to 50,000 cy per month. (This monthly volume limit is further restricted by the overall annual in-Bay disposal volume limits of the Transition Period established under the Management Plan: currently ~2.5 million cy, cumulatively, for SF-9, SF-10, and SF-11.) There are no tipping fees and/or unloading costs associated with the site.

c. **SF-09 Carquinez:** The site is a 1,000 ft by 2,000 ft rectangle located 0.9 miles west of the entrance to Mare Island Straits in eastern San Pablo Bay in Solano County. Disposal is highly regulated and limited to 1.0 million cy per month and 3.0 million cy per year in wet years and 2.0 million cy in other years. (These monthly volume limits are further restricted by the overall annual in-Bay disposal volume limits of the Transition Period established under the Management Plan: currently ~2.5 million cy, cumulatively, for SF-9, SF-10, and SF-11). There are no tipping fees and/or unloading costs associated with the site.

3.2 Multi-User Ocean Disposal Sites (Unconfined Aquatic Disposal)

a. **SF-DODS Deep Ocean Disposal Site:** Open water site located approximately 49 nautical miles west of the Golden Gate. Disposal is highly regulated and limited to 4.8 million cy per year. There are no tipping fees or unloading costs associated with the site; however, site users are responsible for a volume-based *pro rata* share of annual site monitoring costs (which typically *total* approximately $500,000 per year).

b. **SF-08 Bar Channel Site:** The site is a rectangle 15,000 ft long and 3,000 ft wide located 7,500 feet south of the San Francisco Bar Channel in the Pacific Ocean. Ocean disposal here is restricted to sand from Corps of Engineers maintenance dredging of the San Francisco Bar Channel. However, a smaller portion of the site within the three mile coastal waters limit can be utilized by projects with sandy material (20% or less fines) and would be considered beneficial reuse for beach nourishment – see Section 3.3 below. There are no tipping fees and/or unloading costs associated with the site.

3.3 Multi-User Upland/Wetland/Reuse Sites (UWR)

Described below are the multi-user UWR sites currently available to the dredging projects in the region. Other UWR sites that are available only to specific projects, and future UWR sites currently in the planning stages, are discussed separately in Sections 3.4 and 3.5.

a. **Carneros River Ranch:** Carneros River Ranch is a privately owned and operated site located on the Petaluma River. It accepts clean material, which is then used to increase the productivity of the agricultural fields. Tipping fees are negotiable based upon the project. The importer is responsible for all off-loading costs. Carneros River Ranch provides a pipeline to the agricultural field from the shoreline for use by the dredging project contractor. Barge size is limited by a controlling water depth in the Petaluma River of -8 ft MLLW. There is no docking station. The Bel Marin Keys project recently sent material to this site via pipeline.

b. **Winter Island:** Winter Island is a privately owned and operated site located at the confluence of the Sacramento and San Joaquin Rivers and Suisun Bay in Contra Costa County. Dredged material is imported onto the site to re-nourish the island and maintain five miles of perimeter levees. The site has the capacity to take up to 200,000 cy of material a year. The majority of material is off-loaded from barges via clamshell directly on to the levees. The site can accept some pumped material into a contained area. Barges of less than 1,000 cy capacity are desirable since they can go around the island and directly access the levees. The maximum depth of barges that can access the site is 14 feet. Silt and clay material is the most desirable for levee maintenance, but the site also has the ability to accept as a lower priority, a limited amount of sandy material. The site is permitted by the Regional Water Quality Control Board, and has specific material acceptance criteria established in its WDR which allow material having some levels of contaminants not normally suitable for unconfined aquatic disposal to be managed there. Clean dredged material is also accepted at this site. The site charges a standard tipping fee of $1 per cy. The importer is responsible for all unloading costs.

c. **Montezuma Wetlands:** Montezuma is a privately owned and operated site that began accepting material in July 2003. The site is located adjacent to Montezuma Slough in Solano County. The imported material is being used to create wetlands and the site will be accepting material for many years. The site has all required permits, and may accept both “cover” and “non-cover” quality material (i.e., material not normally suitable for unconfined aquatic disposal). The site has deep-water access, as well as a docking area and off-loading equipment. Its off-loading equipment is designed for large barges and volumes and may be unsuitable for small shallow draft barges. The tipping fee varies with the size of the project and ranges from $12 per cy to $15 per cy which includes the unloading and subsequent sediment management costs.

d. **Van Sickle Island:** Van Sickle Island is a 2,362-acre island located on the western edge of the Sacramento-San Joaquin Delta , north of the Stockton Deepwater Ship Channel and within the Suisun Marsh in Solano County. The site is privately owned and operated by Reclamation District 1607 and is currently authorized to accept approximately 6,000 to 8,000 cy of dredge material per year for levee restoration. The owners of the site are requesting permission to expand the operation to accept 500,000 to one million cubic yards of dredge material over a ten year period. If approved the expansion would greatly enhance the potential for use of this disposal option.

e. **Port Sonoma Marina:** This privately owned and operated site is located adjacent to the mouth of the Petaluma River slightly upstream of San Pablo Bay in Sonoma County. The site consists of diked ponds used to store dredged materials and/or to dry material in order to transport it by land for final off-site placement. The ponds are generally reserved for exclusive use by Port Sonoma projects. There may be a possible capacity for other projects of approximately 60,000 to 80,000 cy per year. The main constraint is limited access to off loading areas due to water depths of only -6 to -8 ft MLLW.

f. **SF-08 Bar Channel Site, Eastern Portion:** The easternmost portion of the SF-08 ocean disposal site is within the 3-mile limit and, as such, beneficial reuse of sand from other projects is regulated in this area under the Clean Water Act. The trapezoidal portion of the SF-08 site that is within the 3-mile limit is approximately 3,000 feet long by 430 feet wide at its northern end and 1,000 feet wide at its southern end. Placement of clean sand from maintenance projects other than the San Francisco Bar Channel is considered to be beneficial reuse, because this location is part of the littoral transport system that nourishes Ocean Beach and its environs. There are no tipping fees and/or unloading costs associated with the site. However, the time needed to obtain any needed approvals from the California Coastal Commission should be factored into the permitting timeline.

3.4 Project Specific Upland/Wetland/Reuse Sites:

a. **San Leandro Marina Ponds:** Located near the marina in the City of San Leandro, Alameda County, the ponds cover an area of approximately 100 acres. The ponds are provided by the City of San Leandro for the federal maintenance of the San Leandro Marina Channels, as well as the City's maintenance of the marina itself. The dredged material placed in the ponds is dried and removed for reuse, usually as landfill cover, and the ponds are managed to provide resting habitat for migrating shorebirds. These ponds are dedicated to the exclusive use of the San Leandro Channel and Marina dredging.

b. **Upper Petaluma River Ponds:** The site consists of approximately 210 acres of diked ponds located on the east side of the Petaluma River approximately 1 mile south-east of the intersection of Highway 101 and Lakeville Highway. Currently dried material is removed from the ponds for use as landfill cover, and the ponds are managed between dredging episodes for wetland use. The site is currently used for dredged material from federal dredging of the upper Petaluma River Channel and City of Petaluma projects.

c. **Sea Cloud Phase II :** The site is a low lying basin what was previously part of a salt pond located near the Foster City in San Mateo County. This 18.65 acre disposal site is used exclusively to accommodate accumulated sediments from the dredging of approximately 60 acres of the Foster City Lagoon system.. The dredge material is removed using a combination of hydraulic and mechanical dredges and piped to the disposal site. The disposal site is diked and excess decant water is directed back into the lagoon. Within the disposal area, ponded open water habitat is formed with refuge islands and emergent vegetation on the side of the containment berms.

d. **City of Martinez:** The City of Martinez in Contra Costa County owns and operates an upland disposal site for the disposal of dredged material resulting from the maintenance dredging of the Martinez Marina. Dredged material is placed and dried in the disposal site and then removed for construction and landfill cover. The site is reserved for the exclusive use of Martinez Marina maintenance dredging.

e. **Port of Oakland:** The Port of Oakland has established various disposal options to serve both their small and large dredging operations. At Berth 10, the Port of Oakland has a permitted re-handling facility to dewater unconsolidated mud material. The dried material is then reused at other Port construction sites or sent to a landfill. The Port has also established the Middle Harbor Habitat Enhancement Area (MHEA) to accommodate clean sand and clean consolidated mud. In addition, the Port also has a temporary drying yard at Berth 22. The use of all of these facilities is restricted to Port of Oakland projects.

f. **Pierce Island:** Pierce Island is located in Suisun Slough directly south of Suisun City in Solano County. Suisun City developed a mitigation and disposal plan for former sewage treatment ponds to facilitate the Federal maintenance dredging of Suisun Slough Channel. The site has a capacity of

approximately 660,000 cubic yards. The use of this site is restricted to maintenance dredging disposal for the Federal channel and the Suisun City Marina.

3.5 Pending Multi-User Upland/Wetland/Reuse Sites

a. **Mare Island:** The site is located on the former Mare Island Naval Shipyard facility property on the north side of Carquinez Strait, near the mouth of the Napa River in Solano County. The site consists of nine ponds on the west side of Mare Island. The ponds were previously used by the U.S. Navy for the disposal of dredged material from Mare Island Naval Shipyard facility dredging. The ponds are being proposed for permitting by the City of Vallejo and WESTON Solutions, Inc. as a for-profit confined disposal facility (CDF) designed to manage sediments that are non-hazardous but Not Suitable for Unconfined Aquatic Disposal (NUAD). Placement of NUAD material at this CDF would not be considered beneficial reuse, but placement here of clean material that is otherwise Suitable for Unconfined Aquatic Disposal (SUAD) could be an alternative to in-Bay disposal for dredging projects and may be considered beneficial. A draft EIS/EIR regarding the project is currently under review. According to the draft EIS/EIR, the site will have deep-water access and a docking area, but would not provide an off loading facility. Users would be responsible for providing their own off-loading equipment and all costs associated with off loading. Users would also be responsible for certain other operational aspects of the site. As designed, the project would be able to facilitate both large and small barges. Tipping fees would be charged, but these are unknown at this time.

b. **Hamilton Wetlands Project:** The proposed Hamilton Wetland Restoration Project is a beneficial reuse site located west of San Pablo Bay and southeast of the City of Novato in Marin County. The Hamilton site is approximately 1,000 acres in size and is expected to receive approximately 10 million cy of dredge material for wetlands habitat restoration. The site is authorized as a federal project to be constructed by the Corps of Engineers with the Coastal Conservancy acting as the local sponsor. An EIS/EIR has been completed and site construction is under way. Required approvals by BCDC and the Regional Board have not been applied for. Under current project planning the site will be available for federal projects in late 2005. The site is proposed for expansion to include the adjoining Bel Marin Keys V parcel, which would provide for reuse of approximately 24 million cy of Bay material. As part of this expansion the site may be able to provide upland disposal and reuse for a broad array of Bay dredging projects, including small dredgers

c. **Van Sickle Island (Expansion of Operations):** Reclamation District 1607 has applied for permits to expand the disposal operations at the Van Sickle Island site (see Section 3.3d). The dredge material would be used to rehabilitate failing portions of the 7.1 miles of levees surrounding Van Sickle Island. The material is placed on the interior side of the levees and contoured to raise and strengthen the levee system. The owners have applied for permits to receive 500,000 to 1 million cy of material over a ten year period.

d. **Bair Island:** Bair Island is located in South San Francisco Bay across Redwood Creek from the Port of Redwood City in San Mateo County. The island is now owned by public agencies and is planned for habitat restoration. The U.S. Fish and Wildlife Service have indicated that the inactive salt evaporator ponds could be restored to tidal wetlands using dredged material. No program for such use currently exists.

4.0 PROGRAMMATIC ANALYSIS OF DISPOSAL ALTERNATIVES

This programmatic disposal analysis evaluates potential alternatives for the class of small dredger projects, first by eliminating projects that are already using alternatives to unconfined in-Bay disposal. Then, for those projects currently engaged in unconfined in-Bay disposal, alternatives are assessed based on practicability (including cost, logistics, and technology). Finally, the remaining alternatives are evaluated for degree of potential impact to the aquatic environment, consistent with the 404(b)(1) guidelines. To do this, a series of relevant factors are considered below including placement site availability, capacity, equipment or technical/logistical constraints, and (generically) costs. Alternatives that remain practicable for the small dredger class are then further considered in terms of potential environmental impacts, to identify the Least Environmentally Damaging Practicable Alternative (LEDPA) for the class.

4.1 Initial Project Screening

Table A includes nine initially identified "small dredger" projects that have placed their (otherwise SUAD) dredge material at UWR sites. For the purpose of this programmatic evaluation, it is presumed that the following list of projects in particular will continue to use alternatives to in-Bay disposal in the future [/2]:

Table A – Small Dredger Projects with UWR Sites Available

Project	Average Annual Volume	UWR Placement Site
Ballena Isle Marina	7,500 cy	Upland on site
Bel Marin Keys	42,000 cy	Carneros River Ranch (pipeline)
Foster City Lagoon	11,000 cy	Sea Cloud Phase II
Martinez Marina	10,000 cy	City-Owned Upland Disposal Site
Petaluma Marina	8,000 cy	Upper Petaluma River Disposal Ponds
Pittsburg Marina	2,750 cy	Winter Island (pipeline)
Port Sonoma Marina	45,000 cy	Port Sonoma Marina Disposal Ponds
San Leandro Marina	9,500 cy	San Leandro Marina Disposal Ponds
Suisun City Marina	50,000 cy	Pierce Island

Other than these, the remaining identified small-dredger projects listed in Table B, that have traditionally used the established multi-user in-Bay disposal sites (SF-09, SF-10, and SF-11), are addressed by the following analyses.

4.2 Practicability Evaluation

a. **Equipment:** Small dredger projects in the San Francisco Bay region consist of marinas, private homeowners' docks and other small projects that by definition have water depths of no more than 12 feet (see Table B). Due to the limited depth and tight maneuvering areas, maintenance dredging of these facilities typically requires the use of small mechanical dredging equipment (e.g., clamshell or backhoe excavators) with placement of material into small, shallow-draft disposal barges for transport to placement sites. Such barges are primarily appropriate for use within the relatively protected waters of San Francisco Bay and adjacent areas. In particular, use of such barges in the off shore, open ocean conditions encountered during transportation to the SF-DODS raises concerns for both an increased risk of spillage (beyond that contemplated by EPA in the EIS designating the SF-DODS), and for vessel and human safety. Ocean disposal at SF-DODS by small dredger projects using such equipment is therefore not considered practicable or appropriate.

In addition, small barges are typically thin walled, bottom-dump vessels that hold 250 to 1,000 cubic yards of material. Bottom-dump scow design does not by itself preclude off-loading at a UWR site, but the thin walls on very small scows can make mechanical off-loading (e.g., via a clamshell) unsafe and infeasible. Hydraulic off-loading equipment avoids concerns about damage to thin-walled barges, but hydraulic equipment that is physically suitable for use with small, shallow-draft barges is not presently available at UWR sites.

Suction dredging is not normally utilized for small maintenance dredging projects in the Bay area since overflow is restricted by regulatory agencies and it is difficult to capture economically efficient loads of solids in small, shallow-draft hoppers, especially without overflow. However, suction dredging with direct pipeline discharge to a UWR site is possible in specific cases where the dredging and placement sites are in reasonable proximity to each other (generally 1-3 miles). Some project-specific UWR sites are operated in

[2] These projects can request that DMMO re-include them under this programmatic alternatives evaluation if their situation changes in the future, for example due to a change in the availability of their traditionally-used alternative placement site.

this manner. But direct hydraulic placement is generally not possible for other small dredger projects that are more than three miles from currently available placement sites.

b. **Off-Loading:** Currently available UWR sites either cannot accommodate the small equipment used for small dredger projects (which would require users to double-handle material into larger barges for off-loading), or require site users to handle off-loading themselves. Double handling into larger barges requires additional equipment and a deep-water facility for the operation, and still does not address technology/safety issues regarding mechanical off-loading of small barges that are thin-walled. In addition, re-handling between barges raises environmental concerns about spillage. This kind of re-handling is therefore considered infeasible for small dredgers. Similarly, responsibility for handling off-loading operations at existing UWR sites would require mobilization of needed equipment and/or use of contractors with specific familiarity with each site's regulatory requirements, and appropriate technical expertise to properly operate the site's off-loading equipment (including in some cases providing the off-loading equipment themselves). In cases where the dredging sponsor is required by the UWR facility to provide the offloading equipment either the sponsor must use the same equipment used on the dredging side of the project for disposal or hire an additional set of equipment which can cause project costs to escalate. If the same equipment is used for off loading as for dredging, the project schedule would be more than doubled. For these reasons it is generally considered to be infeasible for the class of small dredgers, which is primarily comprised of marinas and homeowners associations.

In contrast, the disposal barges suitable for use in small dredger projects are designed for bottom dumping at aquatic sites, without the necessity of double handling. Therefore off-loading is feasible for small dredgers at any of the established multi-user in-Bay disposal sites, as well as any other aquatic sites that would accommodate bottom-dump operations.

c. **Site Capacity:** Generally, considering the small average annual disposal quantities generated by the overall small dredger class, capacity to accommodate small dredger projects is not a limiting issue for either the multi-user in-Bay disposal sites, or for most of the available UWR placement sites. In contrast to other classes of dredgers for whom overall in-Bay disposal is expected to decrease over time, the LTMS EIS/EIR and Management Plan specifically contemplated essentially constant levels of in-Bay disposal from small dredger projects throughout the Transition Period due to the constraints discussed in this document.

d. **Material Type:** This Programmatic Alternatives Analysis specifically focuses on SUAD material. In general, all of the currently available disposal and UWR sites can accept SUAD material of any physical type (e.g., silt-clay, sand, or mixed). However, Winter Island is an exception at times (different material types are needed at different times), and the SF-08 Bar Channel Site is only suitable for sand. Otherwise, physical material type does not eliminate any currently available multi-user placement sites from further consideration on a programmatic basis.

e. **Timing:** The time period within which a project's maintenance dredging and disposal work must be completed can be an important logistical consideration (as well as an environmental one, as discussed further below). Permits often require that dredging occur within "Environmental Work Windows" in order to avoid or minimize potential impacts to threatened or endangered species and other sensitive resources. Timing can therefore be a first-order issue for practicability.

Equipment type, placement location, and timing can be inter-related. For example, a UWR site that requires a slow process for off-loading barges can further limit the already-reduced "throughput" on a dredging operation using small shallow-draft barges. In some cases this slower operation can lengthen the time needed to complete a dredging project so that it would have to extend beyond its Environmental Work Window in order to be completed, or require the project sponsor to seek consultation with the Resources Agencies. The need for double handling into larger barges can also slow a project's operation to the point that Work Windows could not be met. Use of any particular placement site that would not allow a small dredger project to be completed within its Environmental Work Window due to increased time needed for off-loading or double handling would be considered not practicable. However, use of different UWR sites at different times may in fact be practicable.

f. **Cost:** Many factors contribute to the cost of a dredging and disposal project. Some of these costs (such as mobilization/demobilization and dredging labor costs) are largely independent of the disposal

alternative, while some of them (such as transportation costs, tipping fees, monitoring costs, additional equipment for offloading, and the need for double handling) are directly related to the placement alternative. Most small dredgers are small marinas or other facilities without the ready access to capital or cash flow to pay for double-handling of material, or to pay contractors to mobilize equipment to unload their projects at UWR sites.

Members of the "small dredger" class of projects are located throughout the San Francisco Bay region. The existing multi-user in-Bay disposal sites offer disposal opportunities in reasonable proximity to these projects. (This is supported by the fact that, with the exception of those projects having a dedicated upland disposal site, each small project identified was found to be utilizing the designated in-Bay disposal site closest to the project. Since these sites are all within the protected waters of San Francisco Bay, they can all be accessed directly by the barges and tugs used at the small dredger project sites.) The distribution of currently available UWR sites is somewhat more skewed toward the northern portions of the region; however, overall, many members of the small dredger class are nevertheless also within reasonable proximity to a UWR site. On this basis transportation costs, alone, are not considered adequate to eliminate any currently available multi-user placement sites from further consideration on a programmatic basis at this time.

UWR sites generally charge tipping fees which are assessed on a per cubic yard disposed basis. In some instances these fees are standard across all projects, in other instances the fee is related to the quantity of disposal. (In such cases, projects with smaller amounts of material may pay higher fees per unit quantity.) In general, the sites with higher tipping fees also provide off-loading and sediment management services (UWR site operation) as part of that cost. In contrast, sites with moderate and low tipping fees require the user to separately pay the costs for offloading, and may require the user to provide the off-loading equipment as well. While the costs of mobilizing unloading equipment or paying higher tipping fees may be beyond the reach of most small dredgers, the (unspecified) off-loading costs are expected to vary by site and by project (relative to size, material type, equipment availability, etc.), and cannot be evaluated programmatically. Therefore tipping fees and offloading costs, alone, cannot be used on a programmatic basis to eliminate any currently available multi-user placement sites from further consideration at this time.

If double handling is needed (e.g., for ocean disposal at SF-DODS or for off-loading at certain UWR sites) consideration must also be given to the availability and cost of operating two complete sets of equipment to accomplish the small dredger project. These costs are unspecified, but would be expected to be very significant for small dredger projects. Therefore alternatives that require double-handling from small barges into larger ones are considered to be not practicable on a programmatic basis for the small dredger class, in part on the basis of cost.

g. Practicability Conclusions: [3]

Based on the preceding consideration of factors relevant to cost, logistics, and technology, the following programmatic conclusions are reached for maintenance dredging projects undertaken by the class of "small dredgers" in the San Francisco Bay region under the LTMS program:

- Unconfined aquatic disposal of SUAD material at existing multi-user sites (SF-09, SF-10, and SF-11) is practicable, and is consistent with the LTMS EIS/EIR and Management Plan.

- Bottom-dump placement of SUAD material at other in-Bay aquatic locations (e.g., for beneficial reuse purposes) is practicable.

- Double-handling of material from small barges into larger barges needed for placement at general use UWR sites is not practicable for small dredger projects on the basis of both logistics (including timing) and cost.

- Continued placement of material at project-specific UWR sites is considered to be practicable for: Foster City Lagoon, Martinez Marina, Petaluma Marina, Port Sonoma Marina, Suisun City Marina and Channel, and San Leandro Marina

[3] As stated in Section 2.2 projects whose circumstances change may petition DMMO for reconsideration.

- Placement of material at a project-specific UWR site by other than the projects listed above is considered to not be practicable.
- Direct pipeline placement of hydraulically dredged material from projects in the immediate vicinity of certain multi-user UWR sites is practicable. This includes:
    - The Carneros River Ranch site for maintenance dredging at Bel Marin Keys
    - The Winter Island site for Pittsburg Marina
- Mechanical placement of NUAD material at Winter Island (within the limits set by the site's Waste Discharge Requirements) is practicable for relatively small volumes, using appropriate barges.
- Transportation of material to the offshore SF-DODS using small barges is not practicable.
- Double handling of material into ocean-going barges for transportation to SF-DODS is not practicable.
- If a project has sandy material SF-8 should be considered, and may be practicable.

The sites and circumstances listed above as not practicable have been eliminated from further programmatic consideration of environmental impacts in the following section.

This Programmatic Alternatives Analysis (SDPAA) will remain valid unless and until the LTMS agencies determine that there has been a significant change in the feasibility of alternatives for the small dredger class. Otherwise the LTMS agencies will modify the SDPAA where needed.

4.3 Environmental Impact Evaluation

The environmental impacts of dredging and disposal in the San Francisco region were assessed in the Final LTMS EIS/EIR on a relative basis. As stated in the EIS/EIR, ..."the degree of actual adverse impacts to the Estuary resources that is associated with current volumes of in-Bay dredged material is impossible to accurately quantify with existing scientific information". The EIS/EIR therefore evaluated impacts on a relative basis using such terminology as " negligible", " low", " moderate", and " high", to describe impacts and relative risk of adverse impacts occurring.

The EIS/EIR considered several alternatives and found that low overall in-Bay disposal volumes would be such that neither direct nor cumulative adverse impacts would be expected. In-Bay disposal of low volumes of dredged material was assigned a " negligible impact rating". The adopted LTMS Management Plan is therefore geared toward reducing in-Bay disposal volumes and increasing use of UWR and other disposal options. Due to the low volumes associated with small dredger projects, they are exempted from the individual in-Bay dredged material disposal allocation process established in the Management Plan and therefore found to have " negligible impacts". Small dredger projects have no secondary impacts since they are maintenance only, and negligible cumulative impacts since only ~5% of pre-Management Plan in-Bay volume and ~10% of current Management Plan in-Bay volumes are from these projects.

The Management Plan also sets forth Environmental Work Windows for dredging projects as the result of the programmatic consultation for the LTMS. The work windows regulate the timing of dredging to prevent impacts to species of concern and are an important consideration when evaluating a dredging project and alternative disposal sites. The Work Windows serve as a primary means for avoiding or minimizing aquatic impacts at the dredging site (minimal concern at the multi-user disposal sites). Small dredger projects are subject to the adopted work windows and as a result, the risk of adverse impacts from small dredger projects is further reduced.

5.0 LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA) FOR SMALL DREDGER PROJECTS UNDER THE LTMS PROGRAM

At the present time disposal alternatives for the small dredger class in the San Francisco Bay region are extremely limited. As shown in Table A, several small dredger projects have specific dedicated disposal

sites. For these projects, the respective UWR placement site listed represents the Least Environmentally Damaging Practicable Alternative (LEDPA) for disposal of the dredged material. For the remaining small dredger projects listed in Table B, unconfined in-Bay disposal, at whichever existing site is determined by the DMMO to be most appropriate for each project, represents the LEDPA. Disposal options for small dredger projects added to the class will be considered under this SPDAA, and the LEDP determined, at the time of submission to and review by the DMMO.

This determination is made based on existing conditions. If project circumstances change, new placement alternatives become available, or existing alternatives cease to be available, this programmatic evaluation will be revisited. In particular, two additional non-aquatic disposal options are currently in the planning/permitting stage. Both the Mare Island Ponds and Hamilton proposals are well located and if established with proper access and unloading facilities may ultimately provide technically and logistically practicable alternatives.

SMALL DREDGER PROGRAMMATIC ALTERNATIVES ANALYSIS (SPDAA)
FOR DISPOSAL OF MAINTENANCE DREDGED MATERIAL
IN THE SAN FRANCISCO BAY REGION
AGREEMENT

Project Name _____

I, _____ (permittee/applicant or authorized agent) have read the SDPAA (10/28/04) developed by the LTMS agencies for small dredgers. A small dredger project is characterized by having a project depth of twelve feet Mean Low Lower Water (MLLW) or less, and having an annual dredging/disposal volume of 50,000 cy or less. My project meets this definition, and I believe that the SDPAA appropriately evaluates issues relevant to it.

Please check the boxes that apply to your project:

❑ The following upland disposal or reuse site is available and feasible for this project, and I propose to use it _____

(NAME OF SITE)

❑ An upland/wetland disposal or reuse site in NOT available and feasible for this project. I propose to use the following multi-user in-Bay disposal site:

- ❑ Alcatraz (SF-11)
- ❑ San Pablo Bay (SF-10)
- ❑ Carquinez Strait (SF-9)

I attest that the above information is true and accurate to my best available information and knowledge.

_____

(AUTHORIZED SIGNATURE) (DATE)

*If your project is not already listed in the SDPAA as a small dredging project and you believe it should be, please contact David Dwinell at the DMMO at (415) 977-8441.